1. (Amended) A router including buffers, for information units transferred through the router, comprising:

a first set of rapidly accessible buffers which store information units received at an input link; and

a second set of buffers for the information units that are accessed more slowly than the first set.

2. (Amended) A router as claimed in claim 1 wherein:

router processing is implemented on one or more router integrated circuit chips;

the first set of buffers is located on the router integrated circuit chips; and

the second set of buffers is located on memory chips separate from the router integrated circuit chips.

4. (Amended) A router as claimed in claim 1 wherein the first set of buffers comprises:

a buffer pool; and

a pointer array of pointers to buffered information units.

16. (Amended) A method of buffering information units in a router comprising:

storing the information units received at an input link in a first set of rapidly accessible buffers; and

storing overflow from the first set of buffers in a second set of buffers that are accessed more slowly than the first set.

26. (Amended) A method as claimed in claim 16 further comprising storing information units waiting for access to the second set of buffers in miss status registers.

29. (Amended) A method as claimed in claim 16 wherein the router is in a network switch or router.

31. (Amended) A network comprising a plurality of interconnected routers, each router including information unit buffers comprising:

a first set of rapidly accessible information unit buffers which store information units received at an input link; and

a second set of information unit buffers which store the information units and that are accessed more slowly than the first set.

40. (Amended) A router comprising:

means for storing information units received at an input link in a first set of rapidly accessible buffers; and

means for storing information units in a second set of buffers that are accessed more slowly than the first set.

Please add new Claims 46-49.

46. (New) A router as claimed in claim 40 wherein the buffers of the first set of rapidly accessible buffers are dynamically assignable to virtual channels to serve as a virtual channel buffer cache.

47. (New) A router as claimed in claim 1 wherein the buffers of the first set of rapidly accessible buffers are dynamically assignable to virtual channels to serve as a virtual channel buffer cache.

48. (New) A method as claimed in claim 16 wherein the buffers of the first set of rapidly accessible buffers are dynamically assignable to virtual channels to serve as a virtual channel buffer cache.

49. (New) A network as claimed in claim 31 wherein the buffers of the first set of rapidly accessible buffers are dynamically assignable to virtual channels to serve as a virtual channel buffer cache.